

***Remarks***

Claims 57, 59-73, 75-77, 79-105 and 107-111 are pending in this application. Claims 1-56 were previously canceled without prejudice or disclaimer. Claims 79-104 have been withdrawn as being directed to non-elected subject matter. Claims 58, 74, 78 and 106 have been cancelled without prejudice or disclaimer. Claims 57, 60, 65-66, 71-73 and 75-77 have been amended. Claim 111 been added.

Claims 57, 60, 65-66, 71-73 and 75-77 have been amended, and claims 58, 74, 78 and 106 have been cancelled, for the sole reason of advancing prosecution. Applicants by amending or canceling any claims, make no admission as to the validity of any rejection made by the Examiner against any of these claims. Applicants reserve the right to reassert any of the claims canceled herein or the original claim scope of any claim amended herein, in a continuing application.

Claim 57 has been amended to recite an "oxazaphospholane compound of formula (1): [formula omitted] (1) wherein R<sup>1</sup> represents a C<sub>1</sub>-C<sub>24</sub> aliphatic moiety which may be a saturated or unsaturated, branched or linear chain, optionally comprising an aliphatic ring, R<sup>2</sup> represents a hydrogen atom or hydrophobic group, the hydrophobic group is a C<sub>1</sub>-C<sub>24</sub> aliphatic moiety which is a saturated or unsaturated, branched or linear aliphatic chain, the aliphatic chain optionally comprising an aliphatic ring, the aliphatic chain or ring optionally substituted with one or more substituents comprising a heteroatom selected from the group consisting of oxygen, halogen, nitrogen and sulfur, Z represents a protecting group selected from the group consisting of methoxymethyl (MOM), tetrahydropyranyl (THP), diphenylmethyl, triethylsilyl (TES), *t*-

butyldimethylsilyl (TBDMS), mesitoate, 9-fluorenylmethyl carbonate (f-moc) , t-butyl carbamate (t-boc), and  $\text{Si}(\text{R}^5)_3$ ,  $\text{R}^5$  being the same or different within the  $\text{Si}(\text{R}_5)_3$ , the protecting group being a C<sub>1</sub>-C<sub>6</sub> branched or straight alkyl group, or an aryl group, and X represents a chemical moiety that is replaced under nucleophilic attack in the presence of a nucleophilic reagent." Support for amended claim 57 can be found throughout the specification and claims as originally filed. For example, please see the specification at page 9, lines 9-13, page 9, lines 19-24, page 10, lines 11-19 and page 12, lines 5 to 12.

Claim 71 has been amended to recite a "process for the manufacture of an oxazaphospholane compound of formula (1) as defined in claim 57, the process comprising reacting a phosphorylating reagent selected from the group consisting of  $\text{POW}_3$ , where W represents a halogen atom, an ethylene chlorophosphite, a methyl phosphodichloridite, a chloro-N,N-diisopropylaminomethyloxophosphite and  $[(\text{isopropyl})_2\text{N}]_2\text{POCH}_2\text{CH}_2\text{CN}$  with a 3-O-protected sphingoid compound of formula (2): [formula omitted] (2) wherein R<sup>1</sup>, Z and X are as defined in claim 57, and Y is an amine or an amino group." Support for amended claim 71 can be found throughout the specification and claims as originally filed. For example, please see the specification at page 12, lines 5 to 12.

Claim 77 has been amended to recite an "oxazaphospholane compound of formula (1): [formula omitted] (1) wherein R<sup>1</sup> represents a C<sub>1</sub>-C<sub>24</sub> aliphatic moiety which may be a saturated or unsaturated, branched or linear chain, optionally comprising an aliphatic ring, R<sup>2</sup> represents a hydrogen atom or hydrophobic group, the hydrophobic group is a C<sub>1</sub>-C<sub>24</sub> aliphatic moiety which is a saturated or unsaturated, branched or

linear aliphatic chain, the aliphatic chain optionally comprising an aliphatic ring, the aliphatic chain or ring optionally substituted with one or more substituents comprising a heteroatom selected from the group consisting of oxygen, halogen, nitrogen and sulfur, Z represents a protecting group selected from the group consisting of methoxymethyl (MOM), tetrahydropyranyl (THP), diphenylmethyl, triethylsilyl (TES), *t*-butyldimethylsilyl (TBDMS), mesitoate, 9-fluorenylmethyl carbonate (f-moc) , *t*-butyl carbamate (*t*-boc), and Si(R<sub>5</sub>)<sub>3</sub>, R<sub>5</sub> being the same or different within the Si(R<sub>5</sub>)<sub>3</sub> and a C1-C6 branched or straight alkyl group, or an aryl group, and X represents a chemical moiety that is replaced under nucleophilic attack in the presence of a nucleophilic reagent, obtainable by the process of claim 71." Support for amended claim 77 can be found throughout the specification and claims as originally filed. For example, please see the specification at page 9, lines 9-13, page 9, lines 19-24, page 10, lines 11-19 and page 12, lines 5 to 12.

Claims 60, 65, 66, 72-73, and 75-76 have each been amended to be placed in proper US format, correct a minor typographical error or to correct dependency. Support for the amendments to claims 60, 65, 66, 72-73, and 75-76 can be found throughout the specification and claims as originally filed.

Claim 111 has been newly added. Newly added claim 111 is directed to the "oxazaphospholane compound according to claim 57, wherein X represents a leaving group selected from the group consisting of a halogen atom, borate, ethylene chlorophosphite, methyl phosphodichloridite, chloro-N,N-diisopropylaminomethyloxophosphite, and [(isopropyl)<sub>2</sub>N]<sub>2</sub>POCH<sub>2</sub>CH<sub>2</sub>CN, wherein X is

optionally substituted with a group selected from the group consisting of an alcohol, an ether, a polyether and a sugar moiety, wherein the alcohol contains an aliphatic moiety selected from the group consisting of an aliphatic chain, an amino aliphatic chain, a heteroatom comprising an aliphatic chain, an aliphatic chain comprising a cyclic ring which ring may be saturated or partially saturated and an aryl group, the aliphatic chain may be a branched or straight, saturated or unsaturated chain.” Support for new claim 111 can be found throughout the specification and claims as originally filed.

No new matter has been added

In view of the remarks set forth herein, further and favorable consideration is respectfully requested.

***I. Allowable Subject Matter***

Applicants thank the Examiner for the indication that the subject matter of claims 58-59, 60-65, 67-69, 70, 76 and 105-110 is allowable. In view of the amendments and remarks set forth herein, Applicants respectfully submit that all of the pending claims are in condition for allowance.

***II. At page 2 of the Official Action, claims 57, 66, 71-75, 77 and 78 have been rejected under 35 USC § 112, second paragraph.***

The Examiner asserts that claims 57, 66, 71-75, 77 and 78 are indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the Examiner asserts that the terms “hydrophobic group,” “protecting group,” and “leaving group” are indefinite.

Applicants respectfully traverse this rejection.

Applicants submit that, where recited in the pending claims, namely in claims 57, 71 and 77, the terms "hydrophobic group," "protecting group," "phosphorlating reagent" and "leaving group" have been sufficiently defined. In this regard, Applicant notes that the term "hydrophobic group" is described as "a C<sub>1</sub>-C<sub>24</sub> aliphatic moiety which is a saturated or unsaturated, branched or linear aliphatic chain, the aliphatic chain optionally comprising an aliphatic ring, the aliphatic chain or ring optionally substituted with one or more substituents comprising a heteroatom selected from the group consisting of oxygen, halogen, nitrogen and sulfur." "Protecting group" is described as being "selected from the group consisting of methoxymethyl (MOM), tetrahydropyranyl (THP), diphenylmethyl, triethylsilyl (TES), t-butyldimethylsilyl (TBDMS), mesitoate, 9-fluorenylmethyl carbonate (f-moc), t-butyl carbamate (t-boc), and Si(R<sup>5</sup>)<sub>3</sub>, R<sup>5</sup> being the same or different within said Si(R<sub>5</sub>)<sub>3</sub> and selected from C<sub>1</sub>-C<sub>6</sub> branched or straight alkyl group, or an aryl group". "Phosphorylating reagent" is described as being "selected from the group consisting of POW<sub>3</sub>, where W represents a halogen atom, an ethylene chlorophosphite, a methyl phosphodichloridite, a chloro-N,N-diisopropylaminomethyloxophosphite and [(isopropyl)<sub>2</sub>N]<sub>2</sub>POCH<sub>2</sub>CH<sub>2</sub>CN." The term "leaving group" is now described in the claims as "a chemical moiety that is replaced under nucleophilic attack in the presence of a nucleophilic reagent."

With respect to the term "leaving group," Applicants note that this term has been defined in line with the description in the application, albeit without limitation to the exemplified groups. It is Applicants' position that any person versed in organic chemistry would readily understand the meaning of the term in the context of the

present subject matter. Further, Applicants submit that there are a wide variety of groups that can be cleaved from the compound upon nucleophilic attack by a nucleophilic reagent, as now defined in the claims. Accordingly, Applicants submit that all of the pending claims are clear and definite within the meaning of 35 USC § 112.

In view of the foregoing, it is submitted that claims 57, 66, 71-75, 77 and 78 are clear and definite within the meaning of 35 USC § 112, second paragraph. Accordingly, the Examiner is respectfully requested to withdraw this rejection.

***III. Claims 59, 64, 65, 67-69 and 76 are objected to.***

Although indicating the subject matter of claims 59, 64, 65, 67-69 and 76 allowable, the Examiner maintains the rejection of these claims as depending from a rejected base claim.

Applicants respectfully traverse this rejection.

Applicants submit that claims 59, 64, 65, 67-69 and 76 each depend, directly or indirectly, from claim 57. Applicants submit that, as amended, claim 57, as well as all of the claims intervening claim 57 and the objected to claims, are now allowable for the reasons set forth above. Accordingly, the Examiner is respectfully requested to withdraw this rejection.

***IV. New claim 111.***

New claim 11 is directed to the oxazaphospholane compound according to claim 57, wherein X represents a leaving group selected from the group consisting of a halogen atom, borate, ethylene chlorophosphite, methyl phosphodichloridite, chloro-

N,N-diisopropylaminomethyloxophosphite, and  $[(\text{isopropyl})_2\text{N}]_2\text{POCH}_2\text{CH}_2\text{CN}$ , wherein X is optionally substituted with a group selected from the group consisting of an alcohol, an ether, a polyether and a sugar moiety, wherein the alcohol contains an aliphatic moiety selected from the group consisting of an aliphatic chain, an amino aliphatic chain, a heteroatom comprising an aliphatic chain, an aliphatic chain comprising a cyclic ring which ring may be saturated or partially saturated and an aryl group, the aliphatic chain may be a branched or straight, saturated or unsaturated chain. Support for new claim 111 can be found throughout the specification and claims as originally filed.

Applicants respectfully submit that new claim 111 is directed to patentable subject matter. Accordingly, Applicants respectfully request an indication that all of the pending claims are now allowable.

**Conclusion**

In view of the foregoing, Applicant submits that the application is in condition for immediate allowance. Early notice to that effect is earnestly solicited. The Examiner is invited to contact the undersigned attorney if it is believed that such contact will expedite the prosecution of the application.

In the event this paper is not timely filed, Applicants petition for an appropriate extension of time. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 14-0112.

Respectfully submitted,

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